SEQUENCE LISTING

<110> Shi, Yigong

<120> CASPASE-9:BIR3 DOMAIN OF XIAP COMPLEXES AND METHODS OF USE

<130> 112911.01501

<140> 10/769,218
<141> 2004-01-30

<150> 60/443,590
<151> 2003-01-30

<160> 23

<170> PatentIn version 3.2

<210> 1
<211> 277
<212> PRT
<213> Homo sapiens

<400> 1

Gly Ala Leu Glu Ser Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu
1 5 10 15

Ser Met Glu Pro Cys Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe
20 25 30

Cys Arg Glu Ser Gly Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys
35 40 45

Glu Lys Leu Arg Arg Arg Phe Ser Ser Leu His Phe Met Val Glu Val
50 55 60

Lys Gly Asp Leu Thr Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu
65 70 75 80

Ala Arg Gln Asp His Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu
85 90 95

Ser His Gly Cys Gln Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr
100 105 110

Gly Thr Asp Gly Cys Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe
115 120 125

Asn Gly Thr Ser Cys Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe
130 135 140

Ile Gln Ala Cys Gly Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala
145 150 155 160

```
Ser Thr Ser Pro Glu Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp
                165                 170                 175

Ala Thr Pro Phe Gln Glu Gly Leu Arg Thr Phe Asp Gln Leu Asp Ala
            180                 185                 190

Ile Ser Ser Leu Pro Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser Thr
        195                 200                 205

Phe Pro Gly Phe Val Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp Tyr
    210                 215                 220

Val Glu Thr Leu Asp Asp Ile Phe Glu Gln Trp Ala His Ser Glu Asp
225                 230                 235                 240

Leu Gln Ser Leu Leu Leu Arg Val Ala Asn Ala Val Ser Val Lys Gly
                245                 250                 255

Ile Tyr Lys Gln Met Pro Gly Cys Phe Asn Phe Leu Arg Lys Lys Leu
            260                 265                 270

Phe Phe Lys Thr Ser
        275
```

<210> 2
<211> 98
<212> PRT
<213> Homo sapiens

<400> 2

```
Ser Thr Asn Leu Pro Arg Asn Pro Ser Met Ala Asp Tyr Glu Ala Arg
1               5                   10                  15

Ile Phe Thr Phe Gly Thr Trp Ile Tyr Ser Val Asn Lys Glu Gln Leu
            20                  25                  30

Ala Arg Ala Gly Phe Tyr Ala Leu Gly Glu Gly Asp Lys Val Lys Cys
        35                  40                  45

Phe His Cys Gly Gly Gly Leu Thr Asp Trp Lys Pro Ser Glu Asp Pro
    50                  55                  60

Trp Glu Gln His Ala Lys Trp Tyr Pro Gly Cys Lys Tyr Leu Leu Glu
65                  70                  75                  80

Gln Lys Gly Gln Glu Tyr Ile Asn Asn Ile His Leu Thr His Ser Leu
                85                  90                  95
```

Glu Glu

<210> 3
<211> 416
<212> PRT
<213> Homo sapiens

<400> 3

```
Met Asp Glu Ala Asp Arg Arg Leu Leu Arg Arg Cys Arg Leu Arg Leu
1               5                  10                  15

Val Glu Glu Leu Gln Val Asp Gln Leu Trp Asp Ala Leu Leu Ser Arg
            20                  25                  30

Glu Leu Phe Arg Pro His Met Ile Glu Asp Ile Gln Arg Ala Gly Ser
        35                  40                  45

Gly Ser Arg Arg Asp Gln Ala Arg Gln Leu Ile Ile Asp Leu Glu Thr
    50                  55                  60

Arg Gly Ser Gln Ala Leu Pro Leu Phe Ile Ser Cys Leu Glu Asp Thr
65                  70                  75                  80

Gly Gln Asp Met Leu Ala Ser Phe Leu Arg Thr Asn Arg Gln Ala Ala
                85                  90                  95

Lys Leu Ser Lys Pro Thr Leu Glu Asn Leu Thr Pro Val Val Leu Arg
            100                 105                 110

Pro Glu Ile Arg Lys Pro Glu Val Leu Arg Pro Glu Thr Pro Arg Pro
        115                 120                 125

Val Asp Ile Gly Ser Gly Gly Phe Gly Asp Val Gly Ala Leu Glu Ser
    130                 135                 140

Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu Ser Met Glu Pro Cys
145                 150                 155                 160

Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe Cys Arg Glu Ser Gly
                165                 170                 175

Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys Glu Lys Leu Arg Arg
            180                 185                 190

Arg Phe Ser Ser Leu His Phe Met Val Glu Val Lys Gly Asp Leu Thr
        195                 200                 205
```

```
Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu Ala Gln Gln Asp His
    210                 215                 220

Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu Ser His Gly Cys Gln
225                 230                 235                 240

Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr Gly Thr Asp Gly Cys
                245                 250                 255

Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe Asn Gly Thr Ser Cys
            260                 265                 270

Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe Ile Gln Ala Cys Gly
        275                 280                 285

Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala Ser Thr Ser Pro Glu
    290                 295                 300

Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp Ala Thr Pro Phe Gln
305                 310                 315                 320

Glu Gly Leu Arg Thr Phe Asp Gln Leu Asp Ala Ile Ser Ser Leu Pro
                325                 330                 335

Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser Thr Phe Pro Gly Phe Val
            340                 345                 350

Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp Tyr Val Glu Thr Leu Asp
        355                 360                 365

Asp Ile Phe Glu Gln Trp Ala His Ser Glu Asp Leu Gln Ser Leu Leu
    370                 375                 380

Leu Arg Val Ala Asn Ala Val Ser Val Lys Gly Ile Tyr Lys Gln Met
385                 390                 395                 400

Pro Gly Cys Phe Asn Phe Leu Arg Lys Lys Leu Phe Phe Lys Thr Ser
                405                 410                 415
```

<210> 4
<211> 98
<212> PRT
<213> Homo sapiens

<400> 4

```
Ser Thr Asn Leu Pro Arg Asn Pro Ser Met Ala Asp Tyr Glu Ala Arg
1               5                   10                  15
```

```
Ile Phe Thr Phe Gly Thr Trp Ile Tyr Ser Val Asn Lys Glu Gln Leu
            20                  25                  30

Ala Arg Ala Gly Phe Tyr Ala Leu Gly Glu Gly Asp Lys Val Lys Cys
        35                  40                  45

Phe His Cys Gly Gly Gly Leu Thr Asp Trp Lys Pro Ser Glu Asp Pro
    50                  55                  60

Trp Glu Gln His Ala Lys Trp Tyr Pro Gly Cys Lys Tyr Leu Leu Glu
65                  70                  75                  80

Gln Lys Gly Gln Glu Tyr Ile Asn Asn Ile His Leu Thr His Ser Leu
                85                  90                  95

Glu Glu
```

<210> 5
<211> 416
<212> PRT
<213> Homo sapiens

<400> 5

```
Met Asp Glu Ala Asp Arg Arg Leu Leu Arg Arg Cys Arg Leu Arg Leu
1               5                   10                  15

Val Glu Glu Leu Gln Val Asp Gln Leu Trp Asp Ala Leu Leu Ser Arg
            20                  25                  30

Glu Leu Phe Arg Pro His Met Ile Glu Asp Ile Gln Arg Ala Gly Ser
        35                  40                  45

Gly Ser Arg Arg Asp Gln Ala Arg Gln Leu Ile Ile Asp Leu Glu Thr
    50                  55                  60

Arg Gly Ser Gln Ala Leu Pro Leu Phe Ile Ser Cys Leu Glu Asp Thr
65                  70                  75                  80

Gly Gln Asp Met Leu Ala Ser Phe Leu Arg Thr Asn Arg Gln Ala Ala
                85                  90                  95

Lys Leu Ser Lys Pro Thr Leu Glu Asn Leu Thr Pro Val Val Leu Arg
            100                 105                 110

Pro Glu Ile Arg Lys Pro Glu Val Leu Arg Pro Glu Thr Pro Arg Pro
        115                 120                 125
```

```
Val Asp Ile Gly Ser Gly Gly Phe Gly Asp Val Gly Ala Leu Glu Ser
    130                 135                 140

Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu Ser Met Glu Pro Cys
145                 150                 155                 160

Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe Cys Arg Glu Ser Gly
                165                 170                 175

Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys Glu Lys Leu Arg Arg
            180                 185                 190

Arg Phe Ser Ser Leu His Phe Met Val Glu Val Lys Gly Asp Leu Thr
        195                 200                 205

Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu Ala Gln Gln Asp His
    210                 215                 220

Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu Ser His Gly Cys Gln
225                 230                 235                 240

Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr Gly Thr Asp Gly Cys
                245                 250                 255

Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe Asn Gly Thr Ser Cys
            260                 265                 270

Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe Ile Gln Ala Cys Gly
        275                 280                 285

Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala Ser Thr Ser Pro Glu
    290                 295                 300

Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp Ala Thr Pro Phe Gln
305                 310                 315                 320

Glu Gly Leu Arg Thr Phe Asp Gln Leu Asp Ala Ile Ser Ser Leu Pro
                325                 330                 335

Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser Thr Phe Pro Gly Phe Val
            340                 345                 350

Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp Tyr Val Glu Thr Leu Asp
        355                 360                 365

Asp Ile Phe Glu Gln Trp Ala His Ser Glu Asp Leu Gln Ser Leu Leu
```

370 375 380

Leu Arg Val Ala Asn Ala Val Ser Val Lys Gly Ile Tyr Lys Gln Met
385 390 395 400

Pro Gly Cys Phe Asn Phe Leu Arg Lys Lys Leu Phe Phe Lys Thr Ser
405 410 415

<210> 6
<211> 416
<212> PRT
<213> Homo sapiens

<400> 6

Met Asp Glu Ala Asp Arg Arg Leu Leu Arg Arg Cys Arg Leu Arg Leu
1 5 10 15

Val Glu Glu Leu Gln Val Asp Gln Leu Trp Asp Ala Leu Leu Ser Arg
20 25 30

Glu Leu Phe Arg Pro His Met Ile Glu Asp Ile Gln Arg Ala Gly Ser
35 40 45

Gly Ser Arg Arg Asp Gln Ala Arg Gln Leu Ile Ile Asp Leu Glu Thr
50 55 60

Arg Gly Ser Gln Ala Leu Pro Leu Phe Ile Ser Cys Leu Glu Asp Thr
65 70 75 80

Gly Gln Asp Met Leu Ala Ser Phe Leu Arg Thr Asn Arg Gln Ala Ala
85 90 95

Lys Leu Ser Lys Pro Thr Leu Glu Asn Leu Thr Pro Val Val Leu Arg
100 105 110

Pro Glu Ile Arg Lys Pro Glu Val Leu Arg Pro Glu Thr Pro Arg Pro
115 120 125

Val Asp Ile Gly Ser Gly Gly Phe Gly Asp Val Gly Ala Leu Glu Ser
130 135 140

Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu Ser Met Glu Pro Cys
145 150 155 160

Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe Cys Arg Glu Ser Gly
165 170 175

Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys Glu Lys Leu Arg Arg

180 185 190

Arg Phe Ser Ser Leu His Phe Met Val Glu Val Lys Gly Asp Leu Thr
195 200 205

Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu Ala Gln Gln Asp His
210 215 220

Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu Ser His Gly Cys Gln
225 230 235 240

Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr Gly Thr Asp Gly Cys
245 250 255

Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe Asn Gly Thr Ser Cys
260 265 270

Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe Ile Gln Ala Cys Gly
275 280 285

Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala Ser Thr Ser Pro Glu
290 295 300

Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp Ala Thr Pro Phe Gln
305 310 315 320

Glu Gly Leu Arg Thr Phe Asp Gln Leu Asp Ala Ile Ser Ser Leu Pro
325 330 335

Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser Thr Phe Pro Gly Phe Val
340 345 350

Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp Tyr Val Glu Thr Leu Asp
355 360 365

Asp Ile Phe Glu Gln Trp Ala His Ser Glu Asp Leu Gln Ser Leu Leu
370 375 380

Leu Arg Val Ala Asn Ala Val Ser Val Lys Gly Ile Tyr Lys Gln Met
385 390 395 400

Pro Gly Cys Phe Asn Phe Leu Arg Lys Lys Leu Phe Phe Lys Thr Ser
405 410 415

<210> 7
<211> 4
<212> PRT
<213> Homo sapiens

<400> 7

Ala Thr Pro Phe
1

<210> 8
<211> 278
<212> PRT
<213> Homo sapiens

<400> 8

Met Glu Asn Thr Glu Asn Ser Val Asp Ser Lys Ser Ile Lys Asn Leu
1 5 10 15

Glu Pro Lys Ile Ile His Gly Ser Glu Ser Met Asp Ser Gly Ile Ser
20 25 30

Leu Asp Asn Ser Tyr Lys Met Asp Tyr Pro Glu Met Gly Leu Cys Ile
35 40 45

Ile Ile Asn Asn Lys Asn Phe His Lys Ser Thr Gly Met Thr Ser Arg
50 55 60

Ser Gly Thr Asp Val Asp Ala Ala Asn Leu Arg Glu Thr Phe Arg Asn
65 70 75 80

Leu Lys Tyr Glu Val Arg Asn Lys Asn Asp Leu Thr Arg Glu Glu Ile
85 90 95

Val Glu Leu Met Arg Asp Val Ser Lys Glu Asp His Ser Lys Arg Ser
100 105 110

Ser Phe Val Cys Val Leu Leu Ser His Gly Glu Glu Gly Ile Ile Phe
115 120 125

Gly Thr Asn Gly Pro Val Asp Leu Lys Lys Ile Thr Asn Phe Phe Arg
130 135 140

Gly Asp Arg Cys Arg Ser Leu Thr Gly Lys Pro Lys Leu Phe Ile Ile
145 150 155 160

Gln Ala Cys Arg Gly Thr Glu Leu Asp Cys Gly Ile Glu Thr Asp Ser
165 170 175

Gly Val Asp Asp Asp Met Ala Cys His Lys Ile Pro Val Glu Ala Asp
180 185 190

Phe Leu Tyr Ala Tyr Ser Thr Ala Pro Gly Tyr Tyr Ser Trp Arg Asn

195 200 205

Ser Lys Asp Gly Ser Trp Phe Ile Gln Ser Leu Cys Ala Met Leu Lys
210 215 220

Gln Tyr Ala Asp Lys Leu Glu Phe Met His Ile Leu Thr Arg Val Asn
225 230 235 240

Arg Lys Val Ala Thr Glu Phe Glu Ser Phe Ser Phe Asp Ala Thr Phe
245 250 255

His Ala Lys Lys Gln Ile Pro Cys Ile Val Ser Met Leu Thr Lys Glu
260 265 270

Leu Tyr Phe Tyr His Leu
275

<210> 9
<211> 258
<212> PRT
<213> Homo sapiens

<400> 9

Ile His Gly Ser Glu Ser Met Asp Ser Gly Ile Ser Leu Asp Asn Ser
1 5 10 15

Tyr Lys Met Asp Tyr Pro Glu Met Gly Leu Cys Ile Ile Ile Asn Asn
20 25 30

Lys Asn Phe His Lys Ser Thr Gly Met Thr Ser Arg Ser Gly Thr Asp
35 40 45

Val Asp Ala Ala Asn Leu Arg Glu Thr Phe Arg Asn Leu Lys Tyr Glu
50 55 60

Val Arg Asn Lys Asn Asp Leu Thr Arg Glu Glu Ile Val Glu Leu Met
65 70 75 80

Arg Asp Val Ser Lys Glu Asp His Ser Lys Arg Ser Ser Phe Val Cys
85 90 95

Val Leu Leu Ser His Gly Glu Glu Gly Ile Ile Phe Gly Thr Asn Gly
100 105 110

Pro Val Asp Leu Lys Lys Ile Thr Asn Phe Phe Arg Gly Asp Arg Cys
115 120 125

Arg Ser Leu Thr Gly Lys Pro Lys Leu Phe Ile Ile Gln Ala Cys Arg

130 135 140

Gly Thr Glu Leu Asp Cys Gly Ile Glu Thr Asp Ser Gly Val Asp Asp
145 150 155 160

Asp Met Ala Cys His Lys Ile Pro Val Glu Ala Asp Phe Leu Tyr Ala
165 170 175

Tyr Ser Thr Ala Pro Gly Tyr Tyr Ser Trp Arg Asn Ser Lys Asp Gly
180 185 190

Ser Trp Phe Ile Gln Ser Leu Cys Ala Met Leu Lys Gln Tyr Ala Asp
195 200 205

Lys Leu Glu Phe Met His Ile Leu Thr Arg Val Asn Arg Lys Val Ala
210 215 220

Thr Glu Phe Glu Ser Phe Ser Phe Asp Ala Thr Phe His Ala Lys Lys
225 230 235 240

Gln Ile Pro Cys Ile Val Ser Met Leu Thr Lys Glu Leu Tyr Phe Tyr
245 250 255

His Leu

<210> 10
<211> 280
<212> PRT
<213> Homo sapiens

<400> 10

Ala Lys Pro Asp Arg Ser Ser Phe Val Pro Ser Leu Phe Ser Lys Lys
1 5 10 15

Lys Lys Asn Val Thr Met Arg Ser Ile Lys Thr Thr Arg Asp Arg Val
20 25 30

Pro Thr Tyr Gln Tyr Asn Met Asn Phe Glu Lys Leu Gly Lys Cys Ile
35 40 45

Ile Ile Asn Asn Lys Asn Phe Asp Lys Val Thr Gly Met Gly Val Arg
50 55 60

Asn Gly Thr Asp Lys Asp Ala Glu Ala Leu Phe Lys Cys Phe Arg Ser
65 70 75 80

Leu Gly Phe Asp Val Ile Val Tyr Asn Asp Cys Ser Cys Ala Lys Met

85 90 95

Gln Asp Leu Leu Lys Lys Ala Ser Glu Glu Asp His Thr Asn Ala Ala
100 105 110

Cys Phe Ala Cys Ile Leu Leu Ser His Gly Glu Glu Asn Val Ile Tyr
115 120 125

Gly Lys Asp Gly Val Thr Pro Ile Lys Asp Leu Thr Ala His Phe Arg
130 135 140

Gly Asp Arg Cys Lys Thr Leu Leu Glu Lys Pro Lys Leu Phe Phe Ile
145 150 155 160

Gln Ala Cys Arg Gly Thr Glu Leu Asp Asp Gly Ile Gln Ala Asp Ser
165 170 175

Gly Pro Ile Asn Asp Thr Asp Ala Asn Pro Arg Tyr Lys Ile Pro Val
180 185 190

Glu Ala Asp Phe Leu Phe Ala Tyr Ser Thr Val Pro Gly Tyr Tyr Ser
195 200 205

Trp Arg Ser Pro Gly Arg Gly Ser Trp Phe Val Gln Ala Leu Cys Ser
210 215 220

Ile Leu Glu Glu His Gly Lys Asp Leu Glu Ile Met Gln Ile Leu Thr
225 230 235 240

Arg Val Asn Asp Arg Val Ala Arg His Phe Glu Ser Gln Ser Asp Asp
245 250 255

Pro His Phe His Glu Lys Lys Gln Ile Pro Cys Val Val Ser Met Leu
260 265 270

Thr Lys Glu Leu Tyr Phe Ser Gln
275 280

<210> 11
<211> 497
<212> PRT
<213> Homo sapiens

<400> 11

Met Thr Phe Asn Ser Phe Glu Gly Ser Lys Thr Cys Val Pro Ala Asp
1 5 10 15

Ile Asn Lys Glu Glu Glu Phe Val Glu Glu Phe Asn Arg Leu Lys Thr

```
            20                  25                  30

Phe Ala Asn Phe Pro Ser Gly Ser Pro Val Ser Ala Ser Thr Leu Ala
        35                  40                  45

Arg Ala Gly Phe Leu Tyr Thr Gly Glu Gly Asp Thr Val Arg Cys Phe
    50                  55                  60

Ser Cys His Ala Ala Val Asp Arg Trp Gln Tyr Gly Asp Ser Ala Val
65                  70                  75                  80

Gly Arg His Arg Lys Val Ser Pro Asn Cys Arg Phe Ile Asn Gly Phe
                85                  90                  95

Tyr Leu Glu Asn Ser Ala Thr Gln Ser Thr Asn Ser Gly Ile Gln Asn
            100                 105                 110

Gly Gln Tyr Lys Val Glu Asn Tyr Leu Gly Ser Arg Asp His Phe Ala
        115                 120                 125

Leu Asp Arg Pro Ser Glu Thr His Ala Asp Tyr Leu Leu Arg Thr Gly
    130                 135                 140

Gln Val Val Asp Ile Ser Asp Thr Ile Tyr Pro Arg Asn Pro Ala Met
145                 150                 155                 160

Tyr Ser Glu Glu Ala Arg Leu Lys Ser Phe Gln Asn Trp Pro Asp Tyr
                165                 170                 175

Ala His Leu Thr Pro Arg Glu Leu Ala Ser Ala Gly Leu Tyr Tyr Thr
            180                 185                 190

Gly Ile Gly Asp Gln Val Gln Cys Phe Cys Cys Gly Gly Lys Leu Lys
        195                 200                 205

Asn Trp Glu Pro Cys Asp Arg Ala Trp Ser Glu His Arg Arg His Phe
    210                 215                 220

Pro Asn Cys Phe Phe Val Leu Gly Arg Asn Leu Asn Ile Arg Ser Glu
225                 230                 235                 240

Ser Asp Ala Val Ser Ser Asp Arg Asn Phe Pro Asn Ser Thr Asn Leu
                245                 250                 255

Pro Arg Asn Pro Ser Met Ala Asp Tyr Glu Ala Arg Ile Phe Thr Phe
            260                 265                 270
```

```
Gly Thr Trp Ile Tyr Ser Val Asn Lys Glu Gln Leu Ala Arg Ala Gly
        275                 280                 285

Phe Tyr Ala Leu Gly Glu Gly Asp Lys Val Lys Cys Phe His Cys Gly
    290                 295                 300

Gly Gly Leu Thr Asp Trp Lys Pro Ser Glu Asp Pro Trp Glu Gln His
305                 310                 315                 320

Ala Lys Trp Tyr Pro Gly Cys Lys Tyr Leu Leu Glu Gln Lys Gly Gln
                325                 330                 335

Glu Tyr Ile Asn Asn Ile His Leu Thr His Ser Leu Glu Glu Cys Leu
            340                 345                 350

Val Arg Thr Thr Glu Lys Thr Pro Ser Leu Thr Arg Arg Ile Asp Asp
        355                 360                 365

Thr Ile Phe Gln Asn Pro Met Val Gln Glu Ala Ile Arg Met Gly Phe
    370                 375                 380

Ser Phe Lys Asp Ile Lys Lys Ile Met Glu Glu Lys Ile Gln Ile Ser
385                 390                 395                 400

Gly Ser Asn Tyr Lys Ser Leu Glu Val Leu Val Ala Asp Leu Val Asn
                405                 410                 415

Ala Gln Lys Asp Ser Met Gln Asp Glu Ser Ser Gln Thr Ser Leu Gln
            420                 425                 430

Lys Glu Ile Ser Thr Glu Glu Gln Leu Arg Arg Leu Gln Glu Glu Lys
        435                 440                 445

Leu Cys Lys Ile Cys Met Asp Arg Asn Ile Ala Ile Val Phe Val Pro
    450                 455                 460

Cys Gly His Leu Val Thr Cys Lys Gln Cys Ala Glu Ala Val Asp Lys
465                 470                 475                 480

Cys Pro Met Cys Tyr Thr Val Ile Thr Phe Lys Gln Lys Ile Phe Met
                485                 490                 495

Ser
```

<210> 12
<211> 618
<212> PRT

<213> Homo sapiens

<400> 12

```
Met His Lys Thr Ala Ser Gln Arg Leu Phe Pro Gly Pro Ser Tyr Gln
1               5                  10                  15

Asn Ile Lys Ser Ile Met Glu Asp Ser Thr Ile Leu Ser Asp Trp Thr
            20                  25                  30

Asn Ser Asn Lys Gln Lys Met Lys Tyr Asp Phe Ser Cys Glu Leu Tyr
        35                  40                  45

Arg Met Ser Thr Tyr Ser Thr Phe Pro Ala Gly Val Pro Val Ser Glu
    50                  55                  60

Arg Ser Leu Ala Arg Ala Gly Phe Tyr Tyr Thr Gly Val Asn Asp Lys
65                  70                  75                  80

Val Lys Cys Phe Cys Cys Gly Leu Met Leu Asp Asn Trp Lys Leu Gly
                85                  90                  95

Asp Ser Pro Ile Gln Lys His Lys Gln Leu Tyr Pro Ser Cys Ser Phe
            100                 105                 110

Ile Gln Asn Leu Val Ser Ala Ser Leu Gly Ser Thr Ser Lys Asn Thr
        115                 120                 125

Ser Pro Met Arg Asn Ser Phe Ala His Ser Leu Ser Pro Thr Leu Glu
    130                 135                 140

His Ser Ser Leu Phe Ser Gly Ser Tyr Ser Ser Leu Ser Pro Asn Pro
145                 150                 155                 160

Leu Asn Ser Arg Ala Val Glu Asp Ile Ser Ser Ser Arg Thr Asn Pro
                165                 170                 175

Tyr Ser Tyr Ala Met Ser Thr Glu Glu Ala Arg Phe Leu Thr Tyr His
            180                 185                 190

Met Trp Pro Leu Thr Phe Leu Ser Pro Ser Glu Leu Ala Arg Ala Gly
        195                 200                 205

Phe Tyr Tyr Ile Gly Pro Gly Asp Arg Val Ala Cys Phe Ala Cys Gly
    210                 215                 220

Gly Lys Leu Ser Asn Trp Glu Pro Lys Asp Asp Ala Met Ser Glu His
225                 230                 235                 240
```

```
Arg Arg His Phe Pro Asn Cys Pro Phe Leu Glu Asn Ser Leu Glu Thr
                245                 250                 255

Leu Arg Phe Ser Ile Ser Asn Leu Ser Met Gln Thr His Ala Ala Arg
            260                 265                 270

Met Arg Thr Phe Met Tyr Trp Pro Ser Ser Val Pro Val Gln Pro Glu
        275                 280                 285

Gln Leu Ala Ser Ala Gly Phe Tyr Tyr Val Gly Arg Asn Asp Asp Val
    290                 295                 300

Lys Cys Phe Cys Cys Asp Gly Gly Leu Arg Cys Trp Glu Ser Gly Asp
305                 310                 315                 320

Asp Pro Trp Val Glu His Ala Lys Trp Phe Pro Arg Cys Glu Phe Leu
                325                 330                 335

Ile Arg Met Lys Gly Gln Glu Phe Val Asp Glu Ile Gln Gly Arg Tyr
            340                 345                 350

Pro His Leu Leu Glu Gln Leu Leu Ser Thr Ser Asp Thr Thr Gly Glu
        355                 360                 365

Glu Asn Ala Asp Pro Pro Ile Ile His Phe Gly Pro Gly Glu Ser Ser
    370                 375                 380

Ser Glu Asp Ala Val Met Met Asn Thr Pro Val Val Lys Ser Ala Leu
385                 390                 395                 400

Glu Met Gly Phe Asn Arg Asp Leu Val Lys Gln Thr Val Gln Ser Lys
                405                 410                 415

Ile Leu Thr Thr Gly Glu Asn Tyr Lys Thr Val Asn Asp Ile Val Ser
            420                 425                 430

Ala Leu Leu Asn Ala Glu Asp Glu Lys Arg Glu Glu Glu Lys Glu Lys
        435                 440                 445

Gln Ala Glu Glu Met Ala Ser Asp Asp Leu Ser Leu Ile Arg Lys Asn
    450                 455                 460

Arg Met Ala Leu Phe Gln Gln Leu Thr Cys Val Leu Pro Ile Leu Asp
465                 470                 475                 480

Asn Leu Leu Lys Ala Asn Val Ile Asn Lys Gln Glu His Asp Ile Ile
                485                 490                 495
```

```
Lys Gln Lys Thr Gln Ile Pro Leu Gln Ala Arg Glu Leu Ile Asp Thr
            500                 505                 510

Ile Leu Val Lys Gly Asn Ala Ala Ala Asn Ile Phe Lys Asn Cys Leu
        515                 520                 525

Lys Glu Ile Asp Ser Thr Leu Tyr Lys Asn Leu Phe Val Asp Lys Asn
    530                 535                 540

Met Lys Tyr Ile Pro Thr Glu Asp Val Ser Gly Leu Ser Leu Glu Glu
545                 550                 555                 560

Gln Leu Arg Arg Leu Gln Glu Glu Arg Thr Cys Lys Val Cys Met Asp
                565                 570                 575

Lys Glu Val Ser Val Val Phe Ile Pro Cys Gly His Leu Val Val Cys
            580                 585                 590

Gln Glu Cys Ala Pro Ser Leu Arg Lys Cys Pro Ile Cys Arg Gly Ile
        595                 600                 605

Ile Lys Gly Thr Val Arg Thr Phe Leu Ser
    610                 615
```

<210> 13
<211> 604
<212> PRT
<213> Homo sapiens

<400> 13

```
Met Asn Ile Val Glu Asn Ser Ile Phe Leu Ser Asn Leu Met Lys Ser
1               5                   10                  15

Ala Asn Thr Phe Glu Leu Lys Tyr Asp Leu Ser Cys Glu Leu Tyr Arg
            20                  25                  30

Met Ser Thr Tyr Ser Thr Phe Pro Ala Gly Val Pro Val Ser Glu Arg
        35                  40                  45

Ser Leu Ala Arg Ala Gly Phe Tyr Tyr Thr Gly Val Asn Asp Lys Val
    50                  55                  60

Lys Cys Phe Cys Cys Gly Leu Met Leu Asp Asn Trp Lys Arg Gly Asp
65                  70                  75                  80

Ser Pro Thr Glu Lys His Lys Lys Leu Tyr Pro Ser Cys Arg Phe Val
                85                  90                  95
```

```
Gln Ser Leu Asn Ser Val Asn Asn Leu Glu Ala Thr Ser Gln Pro Thr
            100                 105                 110

Phe Pro Ser Ser Val Thr Asn Ser Thr His Ser Leu Leu Pro Gly Thr
        115                 120                 125

Glu Asn Ser Gly Tyr Phe Arg Gly Ser Tyr Ser Asn Ser Pro Ser Asn
    130                 135                 140

Pro Val Asn Ser Arg Ala Asn Gln Asp Phe Ser Ala Leu Met Arg Ser
145                 150                 155                 160

Ser Tyr His Cys Ala Met Asn Asn Glu Asn Ala Arg Leu Leu Thr Phe
                165                 170                 175

Gln Thr Trp Pro Leu Thr Phe Leu Ser Pro Thr Asp Leu Ala Lys Ala
            180                 185                 190

Gly Phe Tyr Tyr Ile Gly Pro Gly Asp Arg Val Ala Cys Phe Ala Cys
        195                 200                 205

Gly Gly Lys Leu Ser Asn Trp Glu Pro Lys Asp Asn Ala Met Ser Glu
    210                 215                 220

His Leu Arg His Phe Pro Lys Cys Pro Phe Ile Glu Asn Gln Leu Gln
225                 230                 235                 240

Asp Thr Ser Arg Tyr Thr Val Ser Asn Leu Ser Met Gln Thr His Ala
                245                 250                 255

Ala Arg Phe Lys Thr Phe Phe Asn Trp Pro Ser Ser Val Leu Val Asn
            260                 265                 270

Pro Glu Gln Leu Ala Ser Ala Gly Phe Tyr Tyr Val Gly Asn Ser Asp
        275                 280                 285

Asp Val Lys Cys Phe Cys Cys Asp Gly Gly Leu Arg Cys Trp Glu Ser
    290                 295                 300

Gly Asp Asp Pro Trp Val Gln His Ala Lys Trp Phe Pro Arg Cys Glu
305                 310                 315                 320

Tyr Leu Ile Arg Ile Lys Gly Gln Glu Phe Ile Arg Gln Val Gln Ala
                325                 330                 335

Ser Tyr Pro His Leu Leu Glu Gln Leu Leu Ser Thr Ser Asp Ser Pro
```

340 345 350

Gly Asp Glu Asn Ala Glu Ser Ser Ile Ile His Phe Glu Pro Gly Glu
355 360 365

Asp His Ser Glu Asp Ala Ile Met Met Asn Thr Pro Val Ile Asn Ala
370 375 380

Ala Val Glu Met Gly Phe Ser Arg Ser Leu Val Lys Gln Thr Val Gln
385 390 395 400

Arg Lys Ile Leu Ala Thr Gly Glu Asn Tyr Arg Leu Val Asn Asp Leu
405 410 415

Val Leu Asp Leu Leu Asn Ala Glu Asp Glu Ile Arg Glu Glu Glu Arg
420 425 430

Glu Arg Ala Thr Glu Glu Lys Glu Ser Asn Asp Leu Leu Leu Ile Arg
435 440 445

Lys Asn Arg Met Ala Leu Phe Gln His Leu Thr Cys Val Ile Pro Ile
450 455 460

Leu Asp Ser Leu Leu Thr Ala Gly Ile Ile Asn Glu Gln Glu His Asp
465 470 475 480

Val Ile Lys Gln Lys Thr Gln Thr Ser Leu Gln Ala Arg Glu Leu Ile
485 490 495

Asp Thr Ile Leu Val Lys Gly Asn Ile Ala Ala Thr Val Phe Arg Asn
500 505 510

Ser Leu Gln Glu Ala Glu Ala Val Leu Tyr Glu His Leu Phe Val Gln
515 520 525

Gln Asp Ile Lys Tyr Ile Pro Thr Glu Asp Val Ser Asp Leu Pro Val
530 535 540

Glu Glu Gln Leu Arg Arg Leu Gln Glu Glu Arg Thr Cys Lys Val Cys
545 550 555 560

Met Asp Lys Glu Val Ser Ile Val Phe Ile Pro Cys Gly His Leu Val
565 570 575

Val Cys Lys Asp Cys Ala Pro Ser Leu Arg Lys Cys Pro Ile Cys Arg
580 585 590

Ser Thr Ile Lys Gly Thr Val Arg Thr Phe Leu Ser
595 600

<210> 14
<211> 298
<212> PRT
<213> Homo sapiens

<400> 14

Met Gly Pro Lys Asp Ser Ala Lys Cys Leu His Arg Gly Pro Gln Pro
1 5 10 15

Ser His Trp Ala Ala Gly Asp Gly Pro Thr Gln Glu Arg Cys Gly Pro
20 25 30

Arg Ser Leu Gly Ser Pro Val Leu Gly Leu Asp Thr Cys Arg Ala Trp
35 40 45

Asp His Val Asp Gly Gln Ile Leu Gly Gln Leu Arg Pro Leu Thr Glu
50 55 60

Glu Glu Glu Glu Glu Gly Ala Gly Ala Thr Leu Ser Arg Gly Pro Ala
65 70 75 80

Phe Pro Gly Met Gly Ser Glu Glu Leu Arg Leu Ala Ser Phe Tyr Asp
85 90 95

Trp Pro Leu Thr Ala Glu Val Pro Pro Glu Leu Leu Ala Ala Ala Gly
100 105 110

Phe Phe His Thr Gly His Gln Asp Lys Val Arg Cys Phe Phe Cys Tyr
115 120 125

Gly Gly Leu Gln Ser Trp Lys Arg Gly Asp Asp Pro Trp Thr Glu His
130 135 140

Ala Lys Trp Phe Pro Ser Cys Gln Phe Leu Leu Arg Ser Lys Gly Arg
145 150 155 160

Asp Phe Val His Ser Val Gln Glu Thr His Ser Gln Leu Leu Gly Ser
165 170 175

Trp Asp Pro Trp Glu Glu Pro Glu Asp Ala Ala Pro Val Ala Pro Ser
180 185 190

Val Pro Ala Ser Gly Tyr Pro Glu Leu Pro Thr Pro Arg Arg Glu Val
195 200 205

```
Gln Ser Glu Ser Ala Gln Glu Pro Gly Gly Val Ser Pro Ala Gln Ala
    210                 215                 220

Gln Arg Ala Trp Trp Val Leu Glu Pro Pro Gly Ala Arg Asp Val Glu
225                 230                 235                 240

Ala Gln Leu Arg Arg Leu Gln Glu Glu Arg Thr Cys Lys Val Cys Leu
                245                 250                 255

Asp Arg Ala Val Ser Ile Val Phe Val Pro Cys Gly His Leu Val Cys
            260                 265                 270

Ala Glu Cys Ala Pro Gly Leu Gln Leu Cys Pro Ile Cys Arg Ala Pro
        275                 280                 285

Val Arg Ser Arg Val Arg Thr Phe Leu Ser
    290                 295
```

<210> 15
<211> 184
<212> PRT
<213> Homo sapiens

<400> 15

```
Ala Val Pro Ile Ala Gln Lys Ser Glu Pro His Ser Leu Ser Ser Glu
1               5                   10                  15

Ala Leu Met Arg Arg Ala Val Ser Leu Val Thr Asp Ser Thr Ser Thr
            20                  25                  30

Phe Leu Ser Gln Thr Thr Tyr Ala Leu Ile Glu Ala Ile Thr Glu Tyr
        35                  40                  45

Thr Lys Ala Val Tyr Thr Leu Thr Ser Leu Tyr Arg Gln Tyr Thr Ser
    50                  55                  60

Leu Leu Gly Lys Met Asn Ser Glu Glu Glu Asp Glu Val Trp Gln Val
65                  70                  75                  80

Ile Ile Gly Ala Arg Ala Glu Met Thr Ser Lys His Gln Glu Tyr Leu
                85                  90                  95

Lys Leu Glu Thr Thr Trp Met Thr Ala Val Gly Leu Ser Glu Met Ala
            100                 105                 110

Ala Glu Ala Ala Tyr Gln Thr Gly Ala Asp Gln Ala Ser Ile Thr Ala
        115                 120                 125
```

```
Arg Asn His Ile Gln Leu Val Lys Leu Gln Val Glu Glu Val His Gln
    130                 135                 140

Leu Ser Arg Lys Ala Glu Thr Lys Leu Ala Glu Ala Gln Ile Glu Glu
145                 150                 155                 160

Leu Arg Gln Lys Thr Gln Glu Glu Gly Glu Glu Arg Ala Glu Ser Glu
                165                 170                 175

Gln Glu Ala Tyr Leu Arg Glu Asp
            180
```

<210> 16
<211> 280
<212> PRT
<213> Homo sapiens

<400> 16

```
Ala Lys Pro Asp Arg Ser Ser Phe Val Pro Ser Leu Phe Ser Lys Lys
1               5                   10                  15

Lys Lys Asn Val Thr Met Arg Ser Ile Lys Thr Thr Arg Asp Arg Val
            20                  25                  30

Pro Thr Tyr Gln Tyr Asn Met Asn Phe Glu Lys Leu Gly Lys Cys Ile
        35                  40                  45

Ile Ile Asn Asn Lys Asn Phe Asp Lys Val Thr Gly Met Gly Val Arg
    50                  55                  60

Asn Gly Thr Asp Lys Asp Ala Glu Ala Leu Phe Lys Cys Phe Arg Ser
65                  70                  75                  80

Leu Gly Phe Asp Val Ile Val Tyr Asn Asp Cys Ser Cys Ala Lys Met
                85                  90                  95

Gln Asp Leu Leu Lys Lys Ala Ser Glu Glu Asp His Thr Asn Ala Ala
            100                 105                 110

Cys Phe Ala Cys Ile Leu Leu Ser His Gly Glu Glu Asn Val Ile Tyr
        115                 120                 125

Gly Lys Asp Gly Val Thr Pro Ile Lys Asp Leu Thr Ala His Phe Arg
    130                 135                 140

Gly Asp Arg Cys Lys Thr Leu Leu Glu Lys Pro Lys Leu Phe Phe Ile
145                 150                 155                 160
```

```
Gln Ala Cys Arg Gly Thr Glu Leu Asp Asp Gly Ile Gln Ala Asp Ser
                165                 170                 175

Gly Pro Ile Asn Asp Thr Asp Ala Asn Pro Arg Tyr Lys Ile Pro Val
            180                 185                 190

Glu Ala Asp Phe Leu Phe Ala Tyr Ser Thr Val Pro Gly Tyr Tyr Ser
        195                 200                 205

Trp Arg Ser Pro Gly Arg Gly Ser Trp Phe Val Gln Ala Leu Cys Ser
    210                 215                 220

Ile Leu Glu Glu His Gly Lys Asp Leu Glu Ile Met Gln Ile Leu Thr
225                 230                 235                 240

Arg Val Asn Asp Arg Val Ala Arg His Phe Glu Ser Gln Ser Asp Asp
                245                 250                 255

Pro His Phe His Glu Lys Lys Gln Ile Pro Cys Val Val Ser Met Leu
            260                 265                 270

Thr Lys Glu Leu Tyr Phe Ser Gln
        275                 280
```

<210> 17
<211> 117
<212> PRT
<213> Homo sapiens

<400> 17

```
Arg Asp His Phe Ala Leu Asp Arg Pro Ser Glu Thr His Ala Asp Tyr
1               5                   10                  15

Leu Leu Arg Thr Gly Gln Val Val Asp Ile Ser Asp Thr Ile Tyr Pro
            20                  25                  30

Arg Asn Pro Ala Met Tyr Ser Glu Glu Ala Arg Leu Lys Ser Phe Gln
        35                  40                  45

Asn Trp Pro Asp Tyr Ala His Leu Thr Pro Arg Glu Leu Ala Ser Ala
    50                  55                  60

Gly Leu Tyr Tyr Thr Gly Ile Gly Asp Gln Val Gln Cys Phe Cys Cys
65                  70                  75                  80

Gly Gly Lys Leu Lys Asn Trp Glu Pro Cys Asp Arg Ala Trp Ser Glu
                85                  90                  95
```

His Arg Arg His Phe Pro Asn Cys Phe Phe Val Leu Gly Arg Asn Leu
100 105 110

Asn Ile Arg Ser Glu
115

<210> 18
<211> 124
<212> PRT
<213> Homo sapiens

<400> 18

Met Thr Phe Asn Ser Phe Glu Gly Ser Lys Thr Cys Val Pro Ala Asp
1 5 10 15

Ile Asn Lys Glu Glu Glu Phe Val Glu Glu Phe Asn Arg Leu Lys Thr
20 25 30

Phe Ala Asn Phe Pro Ser Gly Ser Pro Val Ser Ala Ser Thr Leu Ala
35 40 45

Arg Ala Gly Phe Leu Tyr Thr Gly Glu Gly Asp Thr Val Arg Cys Phe
50 55 60

Ser Cys His Ala Ala Val Asp Arg Trp Gln Tyr Gly Asp Ser Ala Val
65 70 75 80

Gly Arg His Arg Lys Val Ser Pro Asn Cys Arg Phe Ile Asn Gly Phe
85 90 95

Tyr Leu Glu Asn Ser Ala Thr Gln Ser Thr Asn Ser Gly Ile Gln Asn
100 105 110

Gly Gln Tyr Lys Val Glu Asn Tyr Leu Gly Ser Arg
115 120

<210> 19
<211> 416
<212> PRT
<213> Homo sapiens

<400> 19

Met Asp Glu Ala Asp Arg Arg Leu Leu Arg Arg Cys Arg Leu Arg Leu
1 5 10 15

Val Glu Glu Leu Gln Val Asp Gln Leu Trp Asp Ala Leu Leu Ser Arg
20 25 30

Glu Leu Phe Arg Pro His Met Ile Glu Asp Ile Gln Arg Ala Gly Ser

35 40 45

Gly Ser Arg Arg Asp Gln Ala Arg Gln Leu Ile Ile Asp Leu Glu Thr
50 55 60

Arg Gly Ser Gln Ala Leu Pro Leu Phe Ile Ser Cys Leu Glu Asp Thr
65 70 75 80

Gly Gln Asp Met Leu Ala Ser Phe Leu Arg Thr Asn Arg Gln Ala Ala
85 90 95

Lys Leu Ser Lys Pro Thr Leu Glu Asn Leu Thr Pro Val Val Leu Arg
100 105 110

Pro Glu Ile Arg Lys Pro Glu Val Leu Arg Pro Glu Thr Pro Arg Pro
115 120 125

Val Asp Ile Gly Ser Gly Gly Phe Gly Asp Val Gly Ala Leu Glu Ser
130 135 140

Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu Ser Met Glu Pro Cys
145 150 155 160

Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe Cys Arg Glu Ser Gly
165 170 175

Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys Glu Lys Leu Arg Arg
180 185 190

Arg Phe Ser Ser Leu His Phe Met Val Glu Val Lys Gly Asp Leu Thr
195 200 205

Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu Ala Gln Gln Asp His
210 215 220

Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu Ser His Gly Cys Gln
225 230 235 240

Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr Gly Thr Asp Gly Cys
245 250 255

Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe Asn Gly Thr Ser Cys
260 265 270

Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe Ile Gln Ala Cys Gly
275 280 285

```
Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala Ser Thr Ser Pro Glu
    290                 295                 300

Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp Ala Thr Pro Phe Gln
305                 310                 315                 320

Glu Gly Leu Arg Thr Phe Asp Gln Leu Asp Ala Ile Ser Ser Leu Pro
                325                 330                 335

Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser Thr Phe Pro Gly Phe Val
            340                 345                 350

Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp Tyr Val Glu Thr Leu Asp
        355                 360                 365

Asp Ile Phe Glu Gln Trp Ala His Ser Glu Asp Leu Gln Ser Leu Leu
    370                 375                 380

Leu Arg Val Ala Asn Ala Val Ser Val Lys Gly Ile Tyr Lys Gln Met
385                 390                 395                 400

Pro Gly Cys Phe Asn Phe Leu Arg Lys Lys Leu Phe Phe Lys Thr Ser
                405                 410                 415
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<210> 20
<211> 98
<212> PRT
<213> Homo sapiens

<400> 20

```
Ser Thr Asn Leu Pro Arg Asn Pro Ser Met Ala Asp Tyr Glu Ala Arg
1               5                   10                  15

Ile Phe Thr Phe Gly Thr Trp Ile Tyr Ser Val Asn Lys Glu Gln Leu
            20                  25                  30

Ala Arg Ala Gly Phe Tyr Ala Leu Gly Glu Gly Asp Lys Val Lys Cys
        35                  40                  45

Phe His Cys Gly Gly Gly Leu Thr Asp Trp Lys Pro Ser Glu Asp Pro
    50                  55                  60

Trp Glu Gln His Ala Lys Trp Tyr Pro Gly Cys Lys Tyr Leu Leu Glu
65                  70                  75                  80

Gln Lys Gly Gln Glu Tyr Ile Asn Asn Ile His Leu Thr His Ser Leu
                85                  90                  95
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Glu Glu

<210> 21
<211> 262
<212> PRT
<213> Homo sapiens

<400> 21

```
Gly Ala Leu Glu Ser Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu
1               5                  10                  15

Ser Met Glu Pro Cys Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe
            20                  25                  30

Cys Arg Glu Ser Gly Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys
        35                  40                  45

Glu Lys Leu Arg Arg Arg Phe Ser Ser Leu His Phe Met Val Glu Val
    50                  55                  60

Lys Gly Asp Leu Thr Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu
65                  70                  75                  80

Ala Gln Gln Asp His Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu
                85                  90                  95

Ser His Gly Cys Gln Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr
            100                 105                 110

Gly Thr Asp Gly Cys Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe
        115                 120                 125

Asn Gly Thr Ser Cys Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe
    130                 135                 140

Ile Gln Ala Cys Gly Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala
145                 150                 155                 160

Ser Thr Ser Pro Glu Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp
                165                 170                 175

Ala Ile Ser Ser Leu Pro Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser
            180                 185                 190

Thr Phe Pro Gly Phe Val Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp
        195                 200                 205
```

Tyr Val Glu Thr Leu Asp Asp Ile Phe Glu Gln Trp Ala His Ser Glu
210 215 220

Asp Leu Gln Ser Leu Leu Leu Arg Val Ala Asn Ala Val Ser Val Lys
225 230 235 240

Gly Ile Tyr Lys Gln Met Pro Gly Cys Phe Asn Phe Leu Arg Lys Lys
245 250 255

Leu Phe Phe Lys Thr Ser
260

<210> 22
<211> 254
<212> PRT
<213> Homo sapiens

<400> 22

Gly Ala Leu Glu Ser Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu
1 5 10 15

Ser Met Glu Pro Cys Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe
20 25 30

Cys Arg Glu Ser Gly Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys
35 40 45

Glu Lys Leu Arg Arg Arg Phe Ser Ser Leu His Phe Met Val Glu Val
50 55 60

Lys Gly Asp Leu Thr Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu
65 70 75 80

Ala Gln Gln Asp His Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu
85 90 95

Ser His Gly Cys Gln Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr
100 105 110

Gly Thr Asp Gly Cys Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe
115 120 125

Asn Gly Thr Ser Cys Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe
130 135 140

Ile Gln Ala Cys Gly Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala
145 150 155 160

```
Ser Thr Ser Pro Glu Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp
                165                 170                 175

Ser Asp Ile Phe Val Ser Tyr Ser Thr Phe Pro Gly Phe Val Ser Trp
            180                 185                 190

Arg Asp Pro Lys Ser Gly Ser Trp Tyr Val Glu Thr Leu Asp Asp Ile
        195                 200                 205

Phe Glu Gln Trp Ala His Ser Glu Asp Leu Gln Ser Leu Leu Leu Arg
    210                 215                 220

Val Ala Asn Ala Val Ser Val Lys Gly Ile Tyr Lys Gln Met Pro Gly
225                 230                 235                 240

Cys Phe Asn Phe Leu Arg Lys Lys Leu Phe Phe Lys Thr Ser
                245                 250
```

<210> 23
<211> 277
<212> PRT
<213> Homo sapiens

<400> 23

```
Gly Ala Leu Glu Ser Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu
1               5                   10                  15

Ser Met Glu Pro Cys Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe
            20                  25                  30

Cys Arg Glu Ser Gly Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys
        35                  40                  45

Glu Lys Leu Arg Arg Arg Phe Ser Ser Leu His Phe Met Val Glu Val
    50                  55                  60

Lys Gly Asp Leu Thr Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu
65                  70                  75                  80

Ala Gln Gln Asp His Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu
                85                  90                  95

Ser His Gly Cys Gln Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr
            100                 105                 110

Gly Thr Asp Gly Cys Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe
        115                 120                 125
```

```
Asn Gly Thr Ser Cys Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe
    130                 135                 140

Ile Gln Ala Cys Gly Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala
145                 150                 155                 160

Ser Thr Ser Pro Glu Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp
                165                 170                 175

Ala Thr Pro Phe Gln Glu Gly Leu Arg Thr Phe Asp Gln Leu Asp Ala
            180                 185                 190

Ile Ser Ser Leu Pro Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser Thr
        195                 200                 205

Phe Pro Gly Phe Val Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp Tyr
    210                 215                 220

Val Glu Thr Leu Asp Asp Ile Phe Glu Gln Trp Ala His Ser Glu Asp
225                 230                 235                 240

Leu Gln Ser Leu Leu Leu Arg Val Ala Asn Ala Val Ser Val Lys Gly
                245                 250                 255

Ile Tyr Lys Gln Met Pro Gly Cys Asp Asn Phe Leu Arg Lys Lys Leu
            260                 265                 270

Phe Phe Lys Thr Ser
        275
```

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

In re Application of: :

Shi :

Serial No. 10/769,218 : Group Art Unit: 1646

Filed: January 30, 2004 : Examiner: not yet assigned

For: CASPACE-9:BIR3 DOMAIN OF XIAP COMPLEXES AND METHODS OF USE

I HEREBY CERTIFY THAT THIS TRANSMITTAL OF FORMAL SEQUENCE LISTING ALONG WITH THE DOCUMENTS CITED THEREIN IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE VIA REGULAR MAIL, POSTAGE PREPAID UNDER 37 C.F.R. § 1.8 ON THE DATE INDICATED ABOVE AND IS ADDRESSED TO COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450.

JENNIFER MARTINEZ
(Typed or printed name of person mailing paper or fee)

(Signature of person mailing paper or fee)

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1. Transmittal of Formal Sequence Listing;
2. Statement Pursuant to 37 CFR 1.821(f);
3. 2 CD Rom and paper copy of listing;
4. Postcard; and
5. Certificate of Mailing